SOAP Message Serialization with Templating & Caching

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Abstract

Web services marked a remarkable milestone in the field of distributed computing. Its predecessors like, Java RMI and .NET Remoting had their own ways of communication and optimized to suit their individual frameworks The gain was in performance - which led web services to be behind. SOAP message serializing process itself contributes 90% of the performance bottlenecks found in web service communication (II).

The research focuses on improving SOAP message serialization process with Templating and Caching. With Tern plating, we use a given WSDL to generate SOAP message templates at the time of code generation and in runtime the generated templates will he substituted with input arguments to the web service APIs. These substituted templates will be cached in the SOAP message template repository, with a unique key to identify- each web service request. Cached SOAP message requests will be used in subsequent web service calls, if a match found.

With the performance test results obtained, we could witness that Templating & Caching improves the web service performance and the factor of improvement depends on the complexity of objects involved in the web service API call. Also the performance gain due lo Templating & Caching increases as the object complexity increases and Templating itself contributes in a larger percentage to the performance gain than the Caching, as the object complexity increases